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BIRDS COLLECTED DURING THE WHITNEY SOUTH SEA EXPEDITION. XXXV[1]

NOTES ON NEW GUINEA BIRDS. II

BY ERNST MAYR

This paper continues the review of the non-passerine families of the Papuan Region initiated in an earlier paper. Again a considerable portion of the studied material was collected by the Whitney South Sea Expedition or associated expeditions.

The present paper contains notes on species of the families Cuculidae, Tytonidae, Strigidae, Podargidae, Caprimulgidae, Alcedinidae and Bucerotidae. I am much obliged to Mr. J. L. Peters of the Museum of Comp. Zoöl., Cambridge, and Dr. E. Stresemann of the Zool. Museum, Berlin, for the loan of valuable specimens for comparison, and to Dr. Junge for notes on specimens in the Leiden Museum.

CUCULIDAE

Cuculus canorus Linnaeus

There are quite a number of old records of this species for the Papuan Region, but I have not seen a single specimen in the many recent collections that have gone through my hands, in fact I have never seen an authentic specimen from the New Guinea region. It is possible that some of the old specimens really belonged to *C. optatus;* they should be reëxamined.

Eudynamis scolopacea rufiventer (Lesson)

Stresemann, summarizing what was in 1923 known about the distribution of this form (Arch. f. Naturgesch., LXXXIX, fasc. 8, p. 44) states that the range of *rufiventer* is as follows: "Misol, Salawati, Batanta, from N. W. New Guinea eastward on the south coast at least as far as Hall Sound, on the north coast as far as Astrolabe Bay; Dampier Island." He does not mention *minima* van Oort, but says that *rufiventer*

[1] Previous papers in this series comprise American Museum Novitates, Nos. 115, 124, 149, 322, 337, 350, 356, 364, 365, 370, 419, 469, 486, 488, 489, 502, 504, 516, 520, 522, 531, 590, 609, 628, 651, 665, 666, 709, 714, 820, 828, 912, 915, and 933.

is represented in Eastern New Guinea by *cyanocephala* whose range is as follows: "Northern Australia and southeast New Guinea, westward along the north coast at least as far as the Kumusi River, on the south coast as far as the foothills of the Owen Stanley Range."

The fact that the Archbold Expedition of 1933 obtained both forms at Daru has caused Mayr and Rand (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, p. 67) to suspect that *cyanocephala* occurs in New Guinea only as a migrant, and that the range of *rufiventer* extends all over New Guinea (excepting the range of *minima*). A renewed examination of the material of the Rothschild Collection has fully confirmed this opinion.

No significant differences either in size or coloration of the females could be found between birds from west, north and southeast New Guinea.

The size of wing and tail of fully adult males of *rufiventer* from various localities is as follows: Arfak, wing 197, tail 185; Geelvink Bay, wing 186, 193, tail 167, 190, 196; Dampier Island, wing 188, 192, 195, 196, 199, 199, tail 164, 176, 187, 188, 189, 191; Wau, Morobe district, wing 187, 187, 190, 190, 191, 195, tail 182, 182, 183, 191, 195; southeast New Guinea, wing 190, 192, 195, tail 192, 196, 198; lower Digul, wing 187, tail 180; an adult male from Keku, Astrolabe Bay (March 26) measures, wing 201, tail 183, and may not belong to *rufiventer*. The combined measurements of these twenty birds are as follows: wing 186–199 (192.0), tail 164–198 (186.0).

For adult females I find the following measurements: Arfak (?), wing 178, tail 172; Ron Island, wing 188, tail 172; north New Guinea, between Mamberano and Astrolabe Bay, wing 185, 188, 188, tail 167, 176, 176; Dampier Island, wing 181, 184, 187, 188, 188, 191, 192, 195, tail 173, 175, 175, 176, 177, 178, 186, 188; Surprise Creek, Morobe district, wing 187, tail 185. The combined measurements of these 14 birds are, wing 178–195 (186.6), tail 167–188 (176.5).

Much smaller is apparently *Eudynamis scolopacea minima* van Oort known from only a few specimens, from the Noord River (south New Guinea), in which the adult has a wing shorter than 180 mm.

Eudynamis scolopacea subcyanocephala Mathews

All the specimens of "*cyanocephala*" collected in New Guinea, for which I could find records, were obtained in the months of March, April, June, and August, that is in the Australian winter. Two adult males measure, wing 202, 205, tail 192, 193, and two females wing 198, 212, tail 188, 191. Compare also the measurements given by Mayr and Rand (*op. cit.*, p. 66).

These measurements agree quite well with specimens from Cape York and northwest Australia (type-locality of *subcyanocephala*), but are definitely smaller than those of birds from New South Wales and southern Queensland. Such birds measure: wing ♂ 213–226 (220.7), ♀ 207–222 (213.1). It seems therefore probable that the majority of the birds that winter in southern and eastern New Guinea (between Fly River and Huon Gulf) belong to *subcyanocephala* from northern Australia. Salvadori has already listed specimens of both *rufiventer* and of *cyanocephala* from the Fly River and from southeast New Guinea although he records them all as *cyanocephala* ('Orn. Pap. Mol.,' I, p. 368).

Centropus bernsteinii manam, new subspecies

TYPE.—No. 450939, Amer. Mus. Nat. Hist.; ♂ ad.; Vulcan (= Manam) Island, German New Guinea; December 7, 1913; A. R. Meek.

Similar to *C. b. bernsteinii*, but larger.

		WING	TAIL
Vulcan Island	♂ ad.	179, 180, 182, 190	248, 260, 262, 275
	♀ ad.	189, 192, 201	266, 269, 270
North New Guinea	♂ ad.	160, 166, 168, 172	218, 238, 243, 245
		173, 175, 176, 179	247, 252, 252
	♀ ad.	179, 181, 183	251, 263, 265

RANGE.—Vulcan (= Manam) Island, Mandated Territory of New Guinea.

The New Guinea material examined by me was all collected in north New Guinea between Humboldt Bay and Huon Gulf, except for one female (183, 265) from the Setekwa River. I therefore asked Dr. Junge for measurements of specimens in the Leiden Museum, which he kindly forwarded to me. The type, a female has a wing of 175 mm., 2 immature males from the Noord River measure 166, 170, and an adult male, also from the Noord River, has a wing of 185. All these specimens except the last named fit in with my own measurements. Either this Noord River bird is wrongly sexed, or specimens from south New Guinea are larger than such from north and west New Guinea.

Centropus phasianinus

Up to ten years ago all the New Guinea representatives of the Australian species were considered to belong to *Centropus nigricans*. In 1927, Stresemann showed however (Ornith. Monatsber., XXXV, p. 111) that specimens from south New Guinea (Merauke District) were quite different from typical *nigricans* Salvadori (type-locality Yule Island and

Hall Sound) and were in fact intermediates between *nigricans* and *phasianinus*. The characters of this race *thierfelderi* were confirmed by Mayr and Rand (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, p. 69).

An examination of the entire material of the Rothschild Collection and of the American Museum has convinced me that *nigricans* is restricted to the south coast of southeast New Guinea and that two additional races must be described from the remainder of the Papuan range.

Centropus phasianinus obscuratus, new subspecies

TYPE.—No. 223654, Amer. Mus. Nat. Hist.; ♀ ad.; Fergusson Island; November 24, 1928; Whitney South Sea Expedition (Hannibal Hamlin).

Similar to *nigricans*, but averaging larger; general coloration darker, more blackish; scapulars and inner secondaries blackish with just a trace of buff vermiculation; buff bars on the outer webs of the primaries very narrow; no bars at all on the inner webs of the primaries, except in one specimen out of five, where they are quite inconspicuous.

Wing, males (?) 220, 222, 225, females (?) 237, 247; tail, males (?) 302, 322, females (?) 313, 321; against: wing, males 203–221 (212.6), females 220–235 (229.2); tail, males 278–316 (298), females 302, 322, 341, in *nigricans*.

RANGE.—Fergusson and Goodenough Islands, D'Entrecasteaux Archipelago, and possibly north coast of southeast New Guinea.

This is the darkest race of *phasianinus*, unless *spilopterus* (Kei Is.) is also included in that species. More material must be examined before the differences in size can be determined exactly. Some of the present material is apparently wrongly sexed.

A male from Annie Inlet near East Cape (wing 212, tail 286) and a female from Kumusi River (wing 232) have the same color characters as the D'Entrecasteaux birds, but are smaller.

Centropus phasianinus propinquus, new subspecies

TYPE.—No. 293675, Amer. Mus. Nat. Hist.; ♂ ad.; Ifar, Sentani Lake; September 28, 1928; Ernst Mayr.

Very similar to *C. ph. nigricans*, but smaller; in coloration not separable from some specimens of the variable *nigricans;* scapulars and inner secondaries with buff undulating cross-bars, sometimes almost as well marked as the upper wing-coverts, not more or less black, as in fully adult *nigricans;* whitish buff bars on outer webs of primaries broad and well defined; bars on underside of wing narrow and obscure; bars on upper tail-coverts and tail well developed; crown, nape and under parts pure black; very little rufous in plumage.

Wing, males 196, 203, 204, female 223; tail, males 261, 266, 270, female 301.

RANGE.—Only specimens from the type-locality examined, but all the specimens of this species collected in north New Guinea between Astrolabe Bay and Mamberano River probably belong to this race.

TYTONIDAE

Tyto tenebricosa arfaki Schlegel

An examination of 20 specimens of *arfaki* reveals that *arfaki* is very different from *tenebricosa* (of Australia), but that there are no races in the Papuan Region. Lord Rothschild has already pointed out the invalidity of Mathews' *perconfusa* (1917, Bull. Brit. Orn. Club, XXXVII, p. 17).

Nine males from the south coast of southeast New Guinea (Angabunga, Aroa, Port Moresby) (up to 6000′) are on the average rather dark; the white spots on the upper parts are small, there is some extent of light mottling in three or four birds; the coloration of the under parts is rather more variable, some specimens being very dark and only a little spotted, others are profusely mottled with white.

Two trade-skins (males) from the Arfak average lighter, with more white mottling above and below.

Among the females, there is more variation. Three females from southeast New Guinea (Aroa River) are rather dark, little mottled. They are similar to a female from Wasior, Wandammen, and to two from Sattelberg.

Lighter and with a considerable amount of white mottling on the upper parts is a fourth female from the Aroa River; similar to this bird is on the upper parts a female from Kampong baru, Japen, which has much coarser and bigger white marks on the under parts, while a female from Collingwood Bay is not quite as light on the under parts, but has the most conspicuous white vermiculation on upper parts, wing and tail. These latter two birds are the lightest in the entire series. The distribution of these variants shows that this is a matter of individual, not geographical variation.

WING, ♂ — Southeast New Guinea 260, 254, 255, 256, 259, 254, 258, 254; Arfak 259, 250; Sattelberg 259.

WING, ♀ — Southeast New Guinea 285, 289, 305; Collingwood Bay 271; Sattelberg 280; Wasior 289; Japen 280.

STRIGIDAE

Ninox theomacha theomacha (Bonaparte)

Spots on the lower abdomen and on the scapulars are more frequent in birds from southeast New Guinea than in such from northwest New Guinea. Individual variation is, however, too strong to permit the recognition of *terricolor* Ramsay.

Ninox theomacha goldii from the D'Entrecasteaux Archipelago is a

well-pronounced race. Hartert was of the opinion (1918, Novit. Zool., XXV, p. 325) that *rosseliana* Tristram could not be separated from *goldii*. I find, however, that most specimens of *rosseliana* have the white spotting of the under parts more pronounced, the uniformly colored zone on the breast more restricted, and the thighs lighter and clearer ochraceous. Some specimens are indistinguishable.

Ninox connivens assimilis Salvadori and D'Albertis

Two specimens from Vulcan Island are very dark, with broad rufous stripes on the under parts and under wing-coverts (see Rothschild and Hartert, 1915, Novit. Zool., XXII, p. 41). A female from Dampier Island is not as deeply colored and can be matched by a specimen from Veimauri, Galley Reach, southeast New Guinea. Three other birds from southeast New Guinea are still paler, but all these differences seem insufficient for subspecific splitting.

Ninox albomaculata Ramsay is a synonym of *assimilis*. Ramsay's original description as well as Kinghorn's detailed discussion (1933, Records Austr. Mus., XVIII, pp. 452–454) apply in every respect to our specimens of *assimilis*. Kinghorn had apparently no specimen of *assimilis* before him, when he suggested *albomaculata* might be a subspecies of *boobook*.

Ninox rufa humeralis (Bonaparte)

This species fades rapidly in collections. Five males and five females, mostly from southeast New Guinea, measure as follows: wing, ♂, 326, 327, 329, 332, 337, ♀, 306, 310, 313, 314, 314; tail, ♂, 198, 203, 208, 210, 214, ♀, 186, 194, 198, 199. There is no difference between nine specimens from eastern, and one from western New Guinea.

UROGLAUX, NEW GENUS

TYPE.—*Athene dimorpha* Salvadori.

Medium-sized, with a hawklike appearance and a very long tail; tail about two-thirds of the length of the wing (index 63.5–72.7), against one-half or more (index 49–63) in the species of the genus *Ninox;* tail slightly rounded; cere quite inflated, nostrils small; tarsus very heavily feathered, feathers covering even the basal phalanx of the toes; bristles on the bare part of the toes only weakly developed; wing very round (5 > 4 > 6 > 3 > 7 > 2), the fifth primary being the longest, while in all the species of *Ninox* either the third or fourth primary is longest; the sixth primary is longer than the third, while in *Ninox* it is slightly or very much shorter; the emargination on primaries 2, 3 and 4 is weak, on 5 and 6 it is inconspicuous; the bases of the feathers of the crown are white; the pattern of coloration, consisting of bars on the upper parts and stripes below, is quite different from that of any species of the genus *Ninox*.

The first specimen that was brought to me by a New Guinea native was first mistaken by me for a hawk. Dr. Hartert, who was such a genus lumper, suggested already in 1930 (Novit. Zool., XXXVI, p. 110) that *dimorpha* should be separated generically from *Ninox*.

CAPRIMULGIDAE

LYNCORNIS

This genus is supposed to differ from *Eurostopodus* by the presence of ear-tufts and by the more pointed wing. A close examination of several species of *Lyncornis* and *Eurostopodus* has convinced me that this difference is very slight and that the Papuan species *papuensis* and *archboldi* (both of which have no appreciable ear-tufts) must be included with *Eurostopodus* (April, 1838). If the genus *Lyncornis* (August, 1838) is to be recognized at all, it must be used for the group of species which includes *cerviniceps*, *macropterus* and *macrotis*.

Eurostopodus papuensis (Schlegel)

Three specimens from Astrolabe Bay (Beck coll.) differ clearly from a series of three birds from northwest New Guinea. They are darker, with all the black markings broader and coarser. The rufous spotting is paler, more clay-colored, less rufous. The differences of the under parts are less pronounced. The population from Astrolabe Bay will probably have to be called *elegans* Reichenow, although the type of *elegans* is a very unusual specimen, as Stresemann has already remarked (1923, Arch. f. Naturgesch., LXXXIX, fasc. 8, p. 31).

The principal characters of the type specimen of *elegans*, which Dr. E. Stresemann has very kindly loaned to me, are as follows, as compared to typical specimens: center of crown with round black spots, instead of longitudinal streaks; tertials and most of the upper wing-coverts unspotted vinaceous-rufous (a sort of pale milk-chocolate color), very soft; breast and belly of the same color, without black bars or well-defined rufous spots; central tail-feathers dark rufous with the black markings much reduced. This unusual plumage is undoubtedly the juvenal plumage. The softness of the feathers indicates this clearly which is particularly evident at the upper and under tail-coverts which are quite downy. Some of the lesser upper wing-coverts and scapulars apparently belong to the adult (or a sub-adult) plumage. They are marked very similarly to those of normal birds. I do not know of any other species in the family *Caprimulgidae* in which the juvenal plumage is as different from the adult as in this case.

Eurostopodus Astrolabae was described by Ramsay (1883, Proc. Linn. Soc. New South Wales, VIII, p. 20) without any reference to "*Lyncornis*" *papuensis*. The description, given by Ramsay, applies very well to our northwest New Guinea specimens of this species, but only an actual comparison of specimens can determine, whether or not there is an endemic race of this species in southeast New Guinea.

Eurostopodus mystacalis (Temminck)

There are only very few New Guinea records of this species. The dates at which these specimens were collected are all, so far as I know, in the Australian winter. It seems more than probable that the species occurs in the Papuan Region only as a winter visitor.

PODARGIDAE

Podargus papuensis Quoy and Gaimard

In 1927 Dr. Stresemann described a small specimen of this species from south New Guinea as *pumilus* as differing from *papuensis* by smaller size (wing 258–264, against 278–302 in *papuensis*). Additional material from south New Guinea fully confirmed the small size of this population. Mayr and Rand record the wing measurements of a series from the Oriomo River as ♂ 272, 282, ♀ 264, 267 (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, p. 71).

In the meantime, however, it has become known that the size variation of this species is rather irregular in relation to geographical distribution. In 1932 I measured in the Brit. Museum a series from Cape York as follows: 262, 275, 278, 280, 285, 285, 296, 298, 299. These birds show no differences in coloration in comparison with south New Guinea birds and, although still more variable, include the entire range of variation of the series from the Oriomo River. These birds from Cape York have been named *rogersi* (= *baileyi*) by Mathews and it seems impossible to keep *pumilus* Stresemann subspecifically distinct.

In 1932 Stresemann and Paludan reported on the birds collected by Stein on the islands of Geelvink Bay (Novit. Zool., XXXVIII, pp. 200 and 233) and found that on Numfor (♀ 252, 275, 282) and Japen (♂ 277, 277, 280, ♀ 273, 273, 280) populations are found which are considerably smaller than those on the mainland of New Guinea. In fact these measurements agreed much better with those of "*pumilus*" and *baileyi* than with those of typical north New Guinea *papuensis*. There were two alternatives of taxonomic treatment. Either all the populations with small measurements (average of wing-length of males below

285) could be treated as belonging to one subspecies notwithstanding the irregular and disrupted distribution which would result, or else this size variation would be considered as being below the threshold of subspecific recognition. Stresemann and Paludan chose the latter course and included the small island population with typical *papuensis*. After a study of a large amount of material Mayr and Rand (*loc. cit.*) followed this lead and also called birds from the entire range *papuensis*. Small size variations are important and should be mentioned in taxonomic papers. It is, however, undesirable to affix names to such size variants unless there is some trend in this variation which results in a clear cut separation of ranges. If the recognition of such size race, however, leads to a distributional map which resembles a checkerboard, it is better to refrain from the usage of subspecific names.

The following tabulation of additional measurements from specimens in the Rothschild Collection, Brit. Mus., and Amer. Mus. serve to illustrate the above discussion. The populations are arranged according to size:

Misol, ♂ 270, ♀ 254, 261; Merauke district, ♂ 264, ♀ 258; Oriomo River, ♂ 272, 282, ♀ 264, 267; Numfor, ♂ 273, ♀ 252, 275, 282; Aru Islands, ♂ 272, 282, 284, ♀ 262, 269, 283; Japen, ♂ 277, 277, 280, 280, 286, ♀ 263, 272, 273, 273, 280; Sepik River, ♂ 276, 291, ♀ 278, 283; Mimika and Setekwa River, ♂ 283, 283, 291, ♀ 269, 280; Cape York, (Rothschild Collection) ♂ 287, 289, 290, 291, 296, 300, 300, 303, ♀ 265, 268, 274, 274, 275, 277, 277, 278, 280, 281, 281, 283, 283, 284, 286, 290; head of Geelvink Bay, ♂ 283, 286, 294, 294, 296, 303, ♀ 269, 281; Arfak and Vogelkop, ♂ 294, 307, ♀ 287, 293, 304; Waigeu, ♂ 301, 303, ♀ 292; Astrolabe Bay, ♂ 297, 299, 309, ♀ 287, 291; north coast of southeast New Guinea, ♂ 300, 302, 303, 307, 308, ♀ 282, 309, (♀!); south coast (Rand and Mayr, *loc. cit.*) ♂ 291, 296, 298, 299, 305, 312, 312, 317, 321, ♀ 274, 280, 282, 283, 292, 295; south coast (additional material), ♂ 306, 311, 313, 324 (Aroa River), ♀ 282, 284, 287, 288, 289, 291, 291, 294, 294, 295; Salawati, ♂ 317.

AEGOTHELES

The two recent partial revisions of the New Guinea members of this genus by Mayr and Rand (Amer. Mus. Novit., No. 814, p. 4, and, Mitt. Zool. Mus. Berlin, XXI, pp. 242–243) will have to be emended in one respect. The oldest specific name for the New Guinea forms, which used to be included in *cristatus*, is *bennetti*, which has page priority over *affinis*.

ALCEDINIDAE

Halcyon macleayii Jardine and Selby

Stresemann (1923, Arch. f. Naturgesch., LXXXIX, fasc. 8, p. 38) records two races from New Guinea, the blue *elisabeth* from Astrolabe Bay and the typical *macleayii* from eastern and southern New Guinea, possibly only as migrant. The fact that we had both blue and greenish-blue birds from eastern New Guinea led Rand and me to the conclusion that both were color phases of one form and that all New Guinea birds were winter visitors from Australia (1937, Bull. Amer. Mus. Nat. Hist., LXXIII, p. 84). A renewed examination of the literature and of our entire material has brought me to a different conclusion. An examination of 18 specimens from New South Wales, of 25 specimens from Queensland and of 12 specimens from Cape York showed that none of these birds was even nearly as blue as some New Guinea specimens. In fact the greenish-blue coloration of the back was fairly uniform. Wear did not change the color of the back to a very great extent. As has been known for a long time, some individuals of this race migrate to the Papuan Region and the Bismarck Archipelago. The greater majority, however, seems to remain in Australia. Of fourteen dated specimens from New South Wales, only four were collected during the breeding season (November), the other ten during the southern winter (May 5. July 2, August 1, September 2). The entire series of Cape York birds (except for one specimen with a wing of 91) consists of small birds with a wing of 87–89 mm. ("*barnardi* Campbell"), while six of twelve New South Wales birds have a wing of 93 mm. or longer. The entire New South Wales series measures 89–96 (av. 91.9).

Of the forty-four Papuan specimens of this species in the A. M. N. H. Collection (including the Rothschild Collection) thirty-two seem to be migrants from Australia. They can in no way be distinguished from a series of New South Wales birds. They are: 1 ♀ imm., Baroka, Bioto Creek, April 17; 1 ♂ ad., Naiabui, Hall Sound, September 1; Aroa River, 1 ♂ ad., May 6, 1 ♀ imm., April 18; Rorona, Galley Reach, 2 ♂ ad., August 11; Boboli, China Straits, 1 ♀ ad., August 20; mainland opposite Samarai, 1 ♂ ad., 1 ♀ ad., September 18 and 28; Collingwood Bay, 1 ♀ ad., May 27; Kumusi River, 2 ♂ ad., 2 ♀ ad., 2 ♀ imm., May 30, July 3; Simbang, Huon Gulf, 2 ♀ ad., August 10; Fergusson Island, 2 ♂ ad., 1 ♂ imm., 1 ♀ imm., May 16, June 12; Kiriwina, Trobriand Island, 1 ♀ imm., May 16; Woodlark Island, 1 ♂ ad., April 26; St. Aignan, 2 ♂ ad., 1 ♀ ad., 1 ♀ imm., August 28, September 2; Sudest Island, 2 ♂ ad., 1 ♀ ad., 1 ♀ imm., May 4 and May 5.

The distribution of these 32 specimens over the months of the year are as follows: April 3, May 10, June 6, July 1, August 6 and September 6. Not a single specimen of the Australian race was collected between October and March. Every adult in May, June and July was molting, August and September birds are in fresh or slightly worn plumage. The wing measurements of adult birds are as follows: ♂ 88–93 (91.1), ♀ 90–96 (93.3).

The other twelve Papuan specimens must be regarded as belonging to *elisabeth*. The wing measurements of adult birds are as follows: ♂ 89, 91, 91, 91.5, 93, ♀ 88, 91, 92, 94, 97. The back is bluish, lacking the greenish tinge of Australian *macleayii*. The white bar across the wing is usually (but not always) much more pronounced, and starting on the third, instead of the fifth primary, the white edge along the inner edge of the primaries is on the contrary, much less conspicuous than in Australian specimens. I have examined the following material (arranged in a geographical sequence): 1 ♂ ad., Baroka, Bioto Creek, April 8; 1 ♀ imm., Aroa River, February 10; 1 ♂ ad., 2 ♀ ad., Rona (450 m.), Central division, March 8–17; 2♂ ad., 1 ♀ ad., Port Moresby, October 10–17; 1 ♂ ad., 1 ♂ imm., Annie Inlet, near East Cape, January 29; 2 ♀ ad., Konstantinhafen, Astrolabe Bay, November 15, and December 4. The majority of these specimens were collected during the breeding season of the Australian race. Plumage condition and molt are as follows: one November bird is very worn, one December, one January and one March bird are very worn and just beginning to molt; two March and one April bird are just completing their molt, and three October birds are fairly worn. The molt of the Astrolabe Bay birds is thus very much earlier, that of the Port Moresby district birds somewhat earlier than that of specimens of the Australian race.

All this is conslusive evidence that eastern New Guinea is inhabited by the endemic race *elisabeth* Heine. The fact that these birds nest in New Guinea is furthermore substantiated by the finding of their nests by Spalding (Proc. Linn. Soc. New South Wales, III, p. 261).

I am not able to study at the present time the differences between the various Australian populations. If the birds of southern Queensland and New South Wales are different from those from Northern Territory, they must be called *incincta* as Laubmann has shown (1924, Verh. Ornith. Ges. Bayern, XVI, p. 22). Cape York specimens average smaller than New South Wales birds, as I have shown above, and *barnardi* Campbell may have to be recognized, if different from typical *macleayii*.

I have not seen any material from the Aru Islands to determine whether or not *insularis* Berlepsch (1911, Abh. Senckenberg. Naturf. Ges., XXXIV, p. 75) is valid. The wing measurements he records for his specimens (80–85 mm.) are certainly smaller than even those of northwest Australian birds (85–91 mm.). He also characterizes this race as having the back bluish like *elisabeth* and as having the sides of the belly washed with rufous. This latter character, however, may be found in specimens of all the races, most rarely in *elisabeth*. Two specimens from the Key Islands (♂ ad. and ♀ imm., May 10) are rather greenish above and measure 86 and 91, they certainly do not show the supposed characters of *insularis*. Two adult males from Sermatta Island (June 14 and 17) are small (♂ 82, 86) and rather bluish above, but differ in this respect not materially from a series from the Northern Territory. They are probably migrants from northwest Australia, since I do not believe that the species nests on Sermatta Island.

Tanysiptera nympha Gray

Stresemann and Paludan (1936, Mitt. Zool. Mus. Berlin, XXI, p. 229) have already called attention to the fact that Laubmann's *rothschildiana* is not valid. From a study of the American Museum material and of the literature I get the following range of variation: western New Guinea, 89, 89, 89, 91, 91, 92, 94, 94.5, eastern New Guinea (Huon Gulf), 89, 92, 92, 92, 93, 96, 96, 96, 96, 96, 97, 97, 98, 98. These figures indicate that birds from the Huon Gulf average larger than such from the Vogelkop and Geelvink Bay, but also, that the overlap is too great to permit the recognition of any forms.

BUCEROTIDAE

Rhyticeros plicatus

In 1934 I named the race *dampieri* from New Britain based on the small size and slender bill (Amer. Mus. Novitates, No. 709, pp. 8–11). Discussing the New Guinea population, I deplored the lack of material from the western part of the Papuan Region and said: "Birds from the western Papuan Islands (including the type-locality, Waigeu) apparently agree in coloration with New Guinea birds, but there is a possibility of a size difference, in which case the New Guinea race would require a new name." At that time the Rothschild Collection was not yet available for study and I had to base my conclusion on the other collections of this Museum. Recently Dr. Junge of the Leiden Museum called my attention to the fact that birds in his collections from western New Guinea and the western Papuan Islands had very much

smaller measurements than those reported by me for north and east New Guinea birds. Following up this information I measured the entire material of the now available Rothschild Collection and found Dr. Junge's conclusions entirely confirmed.

Combining my own measurements and those communicated by Dr. Junge it is apparent that the Papuan Region is inhabited by a series of populations ranging over a wide variation of size. The smallest is found on Misol Island (fide Junge), the next larger on Waigeu (type-locality of *plicatus*) and Salawati, a still larger in northwest and in south New Guinea, a larger in the northern Moluccas, a larger in southeast New Guinea and the largest of all in north New Guinea between Japen Islands and Astrolabe Bay. There is much too much overlap to name everyone of these populations, but on the other hand it seems undesirable to lump them all under one name, particularly since there is a fairly regular increase in size from the southwest to the northeast (excepting the northern Moluccas). I therefore propose to name the population of north New Guinea and to include with it all birds from east New Guinea.

Rhyticeros plicatus jungei, new subspecies

TYPE.—No. 267083, Amer. Mus. Nat. Hist., ♂ ad.; Madang, Astrolabe Bay, August 30, 1928; Rollo H. Beck.

Similar to *Rhyticeros plicatus ruficollis* (Vieillot), but much larger, particularly the bill.

Adult males (4–8 pleats on casque)

ruficollis	WING	TAIL	BILL[1]
Waigeu	409, 418	230, 240	181, 187
Vogelkop	416, 418, 433, 440	238, 242, 253, 254	186, 189, 201, 209
Kapaur	432	251	202
jungei			
Jobi	431, 459	251, 266	207, 210
Takar-Hollandia	—	—	209
Astrolabe Bay	437, 443, 447 454	258, 260, 264 268, 269	210, 212 216, 224, 227
Southeast New Guinea	418, 438, 443, 444	244, 251, 254 257	198, 199, 210, 223
D'Entrecasteaux Archipelago	432, 447, 448	253, 260, 268	197, 221, 223
Aver. west New Guinea	423.7	244.0	193.6
Aver. east New Guinea	441.6	258.8	212.3

[1] Measured from the anterior edge of the nostril to the tip.

Adult females (4–6 pleats on casque)

ruficollis	Wing	Tail	Bill
Waigeu	384, 385	208, 215	148, 155
Vogelkop	381	221	152, 152
junget			
Takar-Hollandia		222	(139)
Astrolabe Bay	411, 414, 417	232, 234	164, 167, 175
Southeast New Guinea	392, 413	222, 222, 245	160, 161, 166
Aver. west New Guinea	383.3	214.7	151.8
Aver. east New Guinea	409.8	229.5	161.7

Further measurements on birds from west and south New Guinea will be found in a paper to be published shortly by Dr. Junge.

RANGE.—Eastern New Guinea, westward as far as Mamberano and Fly Rivers; Japen Island and D'Entrecasteaux Archipelago.